REMARKS

I.   Status of Claims

After the above amendments, claims 1-39 are pending. Claims 1, 6, 10, 15, 19, 21, 22, 26, 30, 34, 38 and 39 are independent. Claims 5 and 9 have been amended to correct for a typographical error.

II.   Rejection of claims under 35 USC § 112, first paragraph

Claims 1, 6, 10, 15, 22, 26, 30 and 34 have been rejected under 35 USC § 112, first paragraph for containing the terms 'predetermined length', 'predetermined number of lengths' and 'preset length', which are terms that were not described in the specification. Further, claims 19, 21, 38 and 39 have been rejected under 35 USC § 112, first paragraph for containing the terms '1/2 average value', '1/2 value' and '1/2 power value', which are terms that were not described in the specification. Applicants respectfully disagree that the claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed had possession of the claimed invention. Nevertheless, the Applicants amended the specification to include the above identified terms in order to further prosecution. Since the claims as originally filed included the above identified terms, no new matter has been added by including the terms in the specification.

In addition, in the specification, Equation (18) and Equation (24), and places where components of Equation (18) are spelled out, have been amended to correct typographical errors. The support for these corrections is in the paragraph starting on line 30 of page 17 and ending on line 22 of page 18, where n is indicated as representing an order of a corresponding symbol among symbols constituting one packet, and having a value of 1 to the number of symbols constituting the packet. Therefore, no new matter has been added.

III.   Rejections under 35 U.S.C. §103(a) as being obvious over LEE (US 2001/0053128 A1) and KAWAGUCHI et al. (US 2002/0110109 A1) in view of OISHI et al. (US 6,028,894 A)

Claims 1, 2 and 6 have been rejected under 35 U.S.C. §103(a) as being obvious over LEE (US 2001/0053128 A1) and KAWAGUCHI et al. (US 2002/0110109 A1) in view of OISHI et al. (US 6,028,894 A). Applicants respectfully request reconsideration of the rejections because the

Examiner has failed to establish a *prima facie* case of obviousness for the rejection. A *prima facie* case of obviousness requires that the prior art references must teach or suggest all the claim limitations. In the rejection of claim 1, LEE was cited as disclosing the following features recited in the Applicants' claim 1:

> a channel estimator for generating <u>a first **signal**</u> by performing <u>channel estimation</u> *using the first channel signal*;
> a channel compensator for generating <u>a second **signal**</u> by <u>channel-compensating the **second channel signal**</u> *using the first signal*

More specifically, the rejection recited that the "output of the pilot filter [was] interpreted as the first signal" and the "output of the PCB extracting unit [was] interpreted as the second signal." However, under the interpretation of LEE taken in the rejection, LEE cannot disclose the above identified features of the Applicants' claim 1. Consider LEE's drawing figure 1 reproduced below.
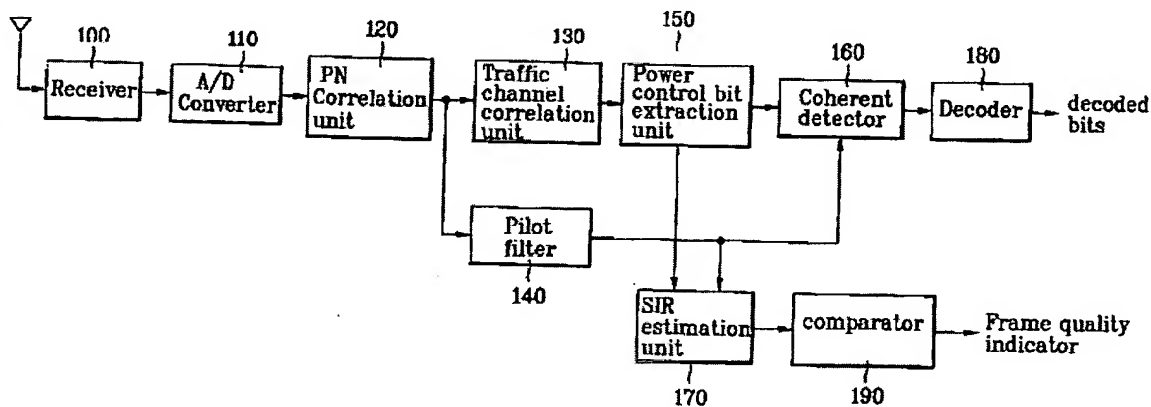
From LEE's drawing figure 1, if the output of the Pilot filter 140 is the first signal, then the Pilot filter 140 is being interpreted as the channel estimator. However, Pilot filter 140 performs a low pass filtering of the received signal that was converted from analog into digital and then despread. Accordingly, performing low pass filtering is not the same as performing channel estimation.

Further, if the output of the PCB extracting unit 150 is the second signal, then the PCB extracting unit 150 is being interpreted as a channel compensator. However, PCB extracting unit 150 extracts only power control bits from each received frame of the traffic channel in which initial

offsets are synchronized with one another by correlation of the traffic channel correlation unit 130. Accordingly, extracting power control bits is not the same as channel-compensating. Furthermore, the applicants' claim recites that the second signal is generated by channel compensating a second channel signal _using the first signal_. Clearly, LEE does not disclose this feature under the interpretation used in the rejection of claim 1. In order for LEE to teach this feature under the Examiner's interpretation, LEE would have to disclose that the signal output by the PCB extracting unit 150 was generated by channel compensating a second channel signal _using signal output from the_ Pilot filter 140. Clearly, this does not occur in LEE.

Therefore, LEE does not disclose a channel estimator for generating <u>a first **signal**</u> by performing <u>channel estimation _using the first **channel signal**_</u>; and a channel compensator for generating <u>a second **signal**</u> by <u>channel-compensating the **second channel signal** _using the first_</u> _**signal**_.

Still further, SIR estimating unit 170 of LEE estimates a signal to noise power ratio E_v/N_t (received SIR) for the currently received traffic channel by applying the outputs of the PCB extracting unit 150 and the pilot filter 140 to the equations (1) and (2). The received SIR obtained by the SIR estimating unit 170 is input to the comparator 190. The comparator 190 compares the received SIR with a reference SIR, which is a threshold value, and then outputs the resultant value. The reference SIR is set by a value that satisfies quality of service (QoS). Accordingly, referring to the equations (1) and (2), SIR estimating unit 170 of LEE does not teach a power ratio generator for <u>generating the power ratio using a ratio of the average value to the square of the absolute value of the first signal,</u> as claimed in claim 1.

Furthermore, KAWAGUCHI et al. and OISHI et al., either alone or in combination, fail to make up for LEE's deficiency in teaching the above subject matter.

In the rejection of claim 1, LEE, KAWAGUCHI et al. and OISHI et al. were cited as disclosing the following features recited in the Applicants' claim 1:

> <u>a power ratio detector</u> for _generating absolute values of symbols_ constituting the second signal, selecting absolute values in a predetermined length after sorting the absolute values in magnitude order, _calculating an average value of the selected absolute values,_ calculating a square of an absolute value of the first signal, and

**generating the power ratio using a ratio of the average value to
the square of the absolute value of the first signal.**

More specifically, the rejection of claim 1 recites that LEE discloses a power ratio detector generating the power ratio using a ratio of the average value to the square of the absolute value of the first signal. However, the location of this subject matter within LEE was not provided in the rejection. Furthermore, in reviewing LEE, it is clear that LEE does not disclose this subject matter. Further, the rejection of claim 1 is dependent on LEE disclosing <u>a power ratio detector generating the power ratio using a ratio of the average value to the square of the absolute value of the first signal</u>. Moreover, KAWAGUCHI et al. and OISHI et al., either alone or in combination, fail to make up for LEE's deficiency. Accordingly, since none of the cited references discloses the above subject matter, LEE cannot disclose the above features recited in the Applicants' claim 1. Therefore, Applicants' claim 1 is allowable over the cited references for the reasons given above and withdrawal of the rejection is hereby requested. Should the rejection be maintained, the Examiner is respectfully requested to articulate in detail how LEE is being interpreted as disclosing <u>a power ratio detector generating the power ratio using a ratio of the average value to the square of the absolute value of the first signal</u>.

Additionally, KAWAGUCHI et al. was cited as disclosing a power ratio detector for generating absolute values of symbols constituting the second signal, selecting absolute values in a predetermined length after sorting the absolute values in magnitude order, and calculating an average value of the selected absolute values. However, KAWAGUCHI et al. *fails to disclose* the subject matter that the rejection relies on KAWAGUCHI et al. to disclose. KAWAGUCHI et al. discloses separately averaging the voltages of I and Q components of a plot signal over one slot. The absolute values of the averaged voltages of the I and Q components are calculated and then compared to determine the larger of the absolute values. Thus, in KAWAGUCHI et al., values are first averaged and then after, the absolute values of the averaged values are determined. By contrast, the claim requires *generating absolute values of symbols* and *calculating an average value of the selected absolute values*. Accordingly, KAWAGUCHI et al. fails to disclose the above identified subject matter recited in the claim. Furthermore, LEE and OISHI et al., either alone or in combination, fail to make up for KAWAGUCHI et al.'s deficiency. Therefore, Applicants' claim 1 is allowable over the cited references for the reasons given above and withdrawal of the rejection is

hereby requested. Should the rejection be maintained, the Examiner is respectfully requested to articulate in detail how KAWAGUCHI et al. is being interpreted as disclosing *generating absolute values of symbols* and *calculating an average value of the selected absolute values.*
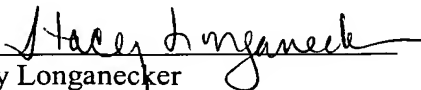
Moreover, OISHI et al. was cited as disclosing calculating a square of an absolute value of the first signal. However, regardless of whether OISHI et al. does or does not disclose this subject matter, OISHI et al. fails to make up for LEE's and KAWAGUCHI et al.'s deficiencies. Therefore, LEE, KAWAGUCHI et al. and OISHI et al., neither alone nor in combination, teaches or suggests each and every feature recited in claim 1. Accordingly, claim 1 is allowable over the cited references for the reasons given above and withdrawal of the rejection is hereby requested. Moreover, dependent claims 2 allowable for the reasons given above by virtue of its dependence on independent claim 1. Independent claim 6 comprises similar subject matter to that recited in independent claim 1 and was rejected citing substantially the same portions of LEE, KAWAGUCHI et al. and OISHI et al. that was cited in the rejection of independent claim 1. Accordingly, independent claim 6 is allowable over LEE, KAWAGUCHI et al. and OISHI et al. for reasons similar to that discussed above with respect to claim 1.

IV.   Conclusion

In view of the above, it is believed that the above-identified application is in condition for allowance, and notice to that effect is respectfully requested. Should the Examiner have any questions, the Examiner is encouraged to contact the undersigned at the telephone number indicated below.

Respectfully submitted,

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